AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1.   (Original)   A system for testing attenuators, comprising:

a vector network analyzer adapted to be coupled to a device under test (DUT), said network analyzer being arranged to provide an input stimulus signal for the DUT and being arranged to receive an output signal from the DUT;

a down-converter having frequency conversion capability;

a signal generator for providing a local oscillator (LO) signal for said down-converter;

a calibration receiver adapted to be coupled to the DUT via said down-converter such that an output signal from the DUT is receivable by said down-converter, optionally modified thereby and sent to said calibration receiver; and

a control unit coupled to said network analyzer and said calibration receiver and arranged to select which of said network analyzer and said calibration receiver measure the output signal from the DUT.

2.   (Original)   The system of claim 1, wherein said down-converter is a microwave down-converter.

3.   (Original)   The system of claim 1, wherein said down-converter includes a memory unit which stores path data containing correction factors to account for changes in contact resistance along switched paths to thereby minimize switch repeatability errors.

4.   (Original)   The system of claim 1, wherein said network analyzer has a frequency range of about 50 MHz to about 40 GHz and a measurement dynamic range of about 70 dB minimum and said calibration receiver is a tuned receiver with a frequency range of about 100 kHz to about 3 GHz and a measurement dynamic range of 0 dB to about -140 dB.

5.   (Original)   The system of claim 1, further comprising a VXI instrument chassis and a programmable DC power supply for controlling settings for programmable attenuators being tested.

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6.   (Original)   The system of claim 1, wherein said signal generator has a frequency range of about 250 kHz to about 40 GHz and is capable of supplying a signal at a level of 10 dBm.

7.   (Original)   The system of claim 1, wherein said control unit embodies software for directing said network analyzer, said calibration receiver, said down-converter and said signal generator to perform a flatness test and a standing wave ratio test.

8.   (Original)   The system of claim 1, wherein said control unit embodies software arranged to generate and allow editing of databases relating to devices under test, tests being performed by the system and instrumentation of the system performing the tests including said network analyzer and said calibration receiver.

9.   (Original)   The system of claim 1, wherein said control unit is arranged to select which of said network analyzer and said calibration receiver measures the output signal from the DUT based on comparison of the output signal to a 50 dB reference.

10.   (Currently Amended)   A method for measuring flatness of an attenuator over a specified frequency range, comprising ~~the steps of~~:

forming a file of attenuator values to be used in the test;

determining instruments to be used in the measurement based upon predetermined conditions relating to the attenuator values in the file, the instruments being selected from a vector network analyzer, a calibration receiver and a down-converter whereby when the attenuator values in the file are all less than or equal to 50 dB, only the network analyzer is used, when the attenuator values in the file are all above 50 dB, only the calibration receiver and the down-converter are used and when at least one of the attenuator values ~~are both~~ in the file is above 50 dB and ~~below~~ at least one of the attenuator values in the file is less than or equal to 50 dB, the network analyzer, the calibration receiver and the down-converter are used; ~~forming a file of attenuator values to be used in the test;~~ and

sequentially testing each of the attenuator values by

when the attenuator ~~values~~ value being tested ~~are~~ is less than or equal to 50 dB, connecting a device under test (DUT) to the network analyzer, directing an input stimulus signal from the network analyzer to the DUT and receiving and measuring output signals from the DUT at the network analyzer,

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when the attenuator ~~values~~ value being tested ~~are~~ is greater than 50 dB, measuring the source power at each frequency, while down-converting the frequency when greater than 1 GHz, without the DUT being connected in a test setup with the calibration receiver and down-converter, and when the source power measurements are completed for the frequencies in the specified frequency range, connecting the DUT to the test setup and measuring the source power at each frequency value, while down-converting the frequency when greater than 1 GHz.

11.   (Currently Amended)   The method of claim 10, further comprising ~~the steps of~~:

performing a two-port calibration on the network analyzer prior to the sequential testing of the attenuator values when the attenuator values being tested are less than or equal to 50 dB;

recalling data generated by the performance of the two-port calibration; and

using the recalled data as a reference for the measurements of the output signals from the DUT at the network analyzer.

12.   (Currently Amended)   The method of claim 10, further comprising ~~the step of~~ obtaining source measurements for use as a reference when the attenuator values being tested are greater than 50 dB.

13.   (Currently Amended)   A method for measuring standing wave ratio of an attenuator, comprising ~~the steps of~~:

forming a file of attenuator values to be used in the test;

connecting a device under test (DUT) having two ports directly to a network analyzer such that the network analyzer is connected to both ports of the DUT and thereby obviating the use of a bridge to couple the DUT to the network analyzer; and

sequentially testing each of the attenuator values by directing an input stimulus signal from the network analyzer to the DUT and receiving and measuring output signals from the DUT at the network analyzer.

14.   (Currently Amended)   A method for testing attenuators over a specified frequency range, comprising ~~the steps of~~:

coupling a vector network analyzer to a device under test (DUT);

directing the network analyzer to provide an input stimulus signal for the DUT;

when the ~~frequency~~ attenuator value being tested is less than or equal to 50 dB,

coupling an output port of the DUT to the network analyzer, and

measuring the output signal by means of the network analyzer; and

when the ~~frequency~~ attenuator value being tested is greater than 50 dB,

coupling a down-converter to an output port of the DUT,

coupling a calibration receiver to the down-converter,

measuring an output signal by means of the calibration receiver, and

down-converting the output signal only when it exceeds the maximum frequency input of

the calibration receiver.

15. (Currently Amended) The method of claim 14, further comprising ~~the step of~~ coupling

a signal generator to the down-converter to provide a local oscillator (LO) signal for the down-converter.

16. (Currently Amended) The method of claim 14, further comprising ~~the steps of~~:

coupling the network analyzer, the calibration receiver and the down-converter to a controller;

and

selecting which of the network analyzer and the calibration receiver is coupled to the output port

of the DUT based on the attenuation being tested.

17. (Original) The method of claim 16, wherein the controller embodies software for

directing the network analyzer, the calibration receiver and the down-converter to perform a flatness test

and a standing wave ratio test.

18. (Original) The method of claim 16, wherein the controller embodies software

arranged to generate and allow editing of databases relating to devices under test, tests being performed

by the system and instrumentation of the system performing the tests including the network analyzer and

the calibration receiver.

19. (Original) The method of claim 14, wherein the down-converter is a microwave

down-converter including a memory unit which stores path data containing correction factors to account

for changes in contact resistance along switched paths to thereby minimize switch repeatability errors.